

**To:** Terrie Boguski[tboguski@skeo.com]  
**From:** Vann, Bradley  
**Sent:** Fri 5/29/2015 9:40:20 PM  
**Subject:** RE: Secrets buried beneath Westlake landfill | ksdk.com

Interesting article. I will route internally but surely expect this was discussed in the past. Antidotal account are difficult to verify though without some kind of physical provenance (transport records, photos, etc.).

As for GPR, or other geophysical tools and like I mentioned at the CAG TC the other night...geophysical tools all have good applications but also their limitations (both surface and borehole applications). Landfills are loaded with stuff that typically scatters or causes noise (depending on tool used) that places huge constraints pretty much all of them. I've used resistivity and its inverse conductivity tools to look at different layering in soils but in LFs typically not too good for those. GPR uses an electromagnetic energy (similar to radar) that measure travel of signal and I've used it to determine show LFs and where the bedrock surface it at but these are not shallow. These types of systems are unfortunately limited in depth penetration in best environments (or where soils or underlying materials such as rock, voids, etc.) creates a significant signature due to the different response in material in which the energy wave encounters and measure travel back. Depths for GPR typically don't go much below 50 feet and are easily scattered when layers are heterogeneous (such as in landfills). Seismic is better for depth as the source of the sounding and sensors can be spaced out to go deeper but it too is subject to interference in landfills (both reflection or refraction). Magnetometers are good for metal signatures but again landfills are full of metals.

I'll still pass it on.

Thanks and have a great weekend.

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-----Original Message-----

From: Terrie Boguski [mailto:tboguski@skeo.com]  
Sent: Tuesday, May 26, 2015 7:59 PM  
To: Vann, Bradley  
Subject: Re: Secrets buried beneath Westlake landfill | ksdk.com

Is this something that you will check into? GPR?

Thanks.  
Terrie

> On May 26, 2015, at 7:38 PM, Harvey Ferdman <HarveyFerdman@aol.com> wrote:  
>  
> Here's a link to the rumor that came up today....  
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> <http://archive.ksdk.com/news/article/383707/70/I-Team-Secrets-beneath-the-We>  
> stlake-landfill-  
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